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ART 34 AMEND

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**ENGLISH LANGUAGE TRANSLATION OF THE
ANNEXES TO THE INTERNATIONAL PRELIMINARY
EXAMINATION REPORT UNDER PCT ARTICLE 36**

(Amended Claims under Article 34)

Replacement Sheets for Claims

International Application No.: PCT/JP03/02422

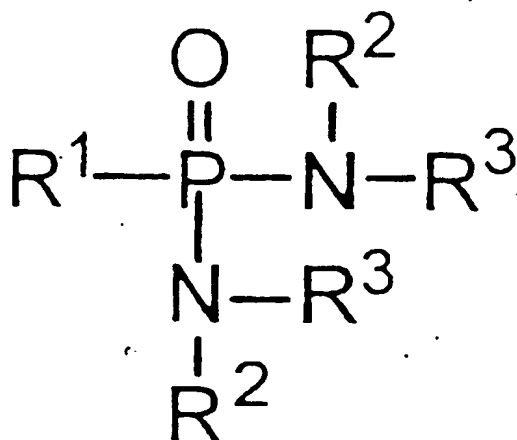
Applicant: Makioka et al.

Title: NOVEL PHOSPHONAMIDES, PROCESS FOR PRODUCING
THE SAME, AND USE THEREOF

Rader, Fishman & Grauer PLLC

CLAIMS

1. A phosphonamide compound represented by the general formula [1]

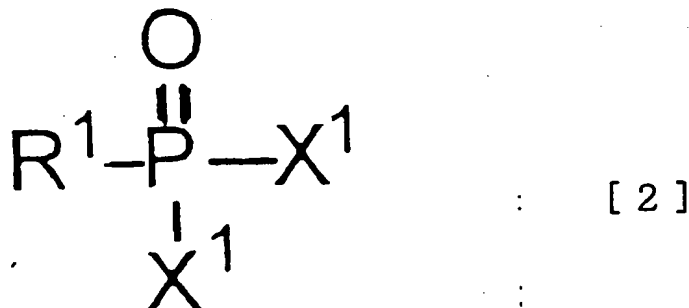


[1]

(wherein R¹ represents an alkyl group, a cycloalkyl group, an alkenyl group, a cycloalkenyl group, an alkynyl group, an aryl group, an aralkyl group, or a heterocyclic group, with the proviso that each group may have a substituent; R² represents a hydrogen atom, an alkyl group, a cycloalkyl group, an alkenyl group, a cycloalkenyl group, an aryl group, an aralkyl group, or a heterocyclic group, with the proviso that each group may have a substituent; R³ represents a hydrogen atom, an alkyl group, a cycloalkyl group, an alkenyl group, a cycloalkenyl group, an aryl group, an aralkyl group, or a heterocyclic group, with the proviso that each group may have a substituent; and the two R³s may be united to form an alkylene group, a cycloalkylene group or an arylene group).

2. A process for producing the phosphonamide compound according to claim 1, characterized by subjecting an amine compound or an ammonium salt compound and a phosphoryl compound to a reaction for phosphorus-nitrogen bond formation in the presence of a basic compound.

3. The production process according to claim 2, wherein the phosphoryl compound is a compound represented by the general formula [2]



(wherein R^1 is the same as above; X^1 represents a leaving group).

4. The production process according to claim 2 or 3, wherein the amine compound is a compound represented by the general formula [3]



(wherein R^2 is the same as above; R^4 represents a hydrogen atom, an alkyl group, a cycloalkyl group, an alkenyl group, a cycloalkenyl group, an aryl group, an aralkyl group, or a heterocyclic group, with the proviso that each group may have a substituent).

5. The production process according to claim 2 or 3, wherein the amine compound is a compound represented by the general formula [4]



(wherein R^2 is the same as above; R^5 represents an alkylene group, a cycloalkylene group or an arylene group).

6. The production process according to claim 2 or 3, wherein the ammonium salt compound is a compound represented by the general formula [5]



(wherein R^2 and R^4 are the same as above; X^2 represents an anion group).

7. The production process according to claim 2 or 3, wherein the ammonium salt

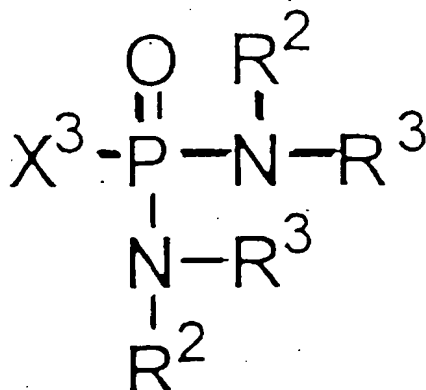
compound is a compound represented by the general formula [6]



(wherein R^2 , R^5 and X^2 are the same as above).

8. A process for producing the phosphonamide compound according to claim 1, characterized by subjecting a phosphoric amide compound and an organometallic compound to a reaction for phosphorus-carbon bond formation.

9. The production process according to claim 8, wherein the phosphoric amide compound is a compound represented by the general formula [7]



[7]

(wherein R^2 and R^3 are the same as above; X^3 represents a leaving group).

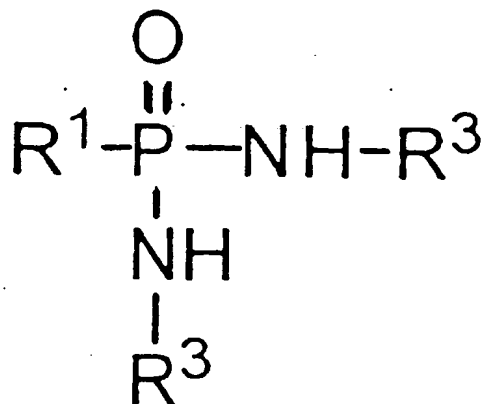
10. The production process according to claim 8 or 9, wherein the organometallic compound is a compound represented by the general formula [8]



(wherein R¹ is the same as above; M represents a metallo group).

11. A process for producing the phosphonamide compound according to claim 1, characterized by subjecting an acidic phosphonamide compound and an organic compound having a leaving group to a reaction for carbon-nitrogen bond formation.

12. The production process according to claim 11, wherein the acidic phosphoramidate compound is a compound represented by the general formula [9]



[9]

(wherein R^1 and R^3 are the same as above).

13. The production process according to claim 11 or 12, wherein the organic compound having a leaving group is an organic compound represented by the general formula [10]



(wherein X^4 represents a leaving group; R^2 is the same as above).

14. An agent for extracting a rare earth metal ion, comprising the phosphonamide compound according to claim 1.

15. A process for extracting a rare earth metal ion from an aqueous solution containing a rare earth metal ion, characterized by using the phosphonamide compound according to claim 1 as an extraction agent.

16. The extraction process according to claim 15, wherein an organic solvent is used for extraction.

17. The extraction process according to claim 15, wherein the organic solvent is an organic solvent which is not completely miscible with water.

18. The extraction process according to claim 15, wherein an aqueous solution containing a rare earth metal ion, a phosphonamide compound according to claim 1 and an organic solvent are mixed and contacted, whereby the metal ion is transferred to the

organic solvent layer.

19. A process for back-extracting a rare earth metal ion, characterized by that the organic solvent layer comprising the extracted rare earth metal ion by the extraction process according to claim 18 is mixed and contacted with a water, whereby the metal ion is transferred to the aqueous layer.

20. The back-extraction process according to claim 19, wherein the water for mixing and contacting is a weakly acidic or acidic water.